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| APPLICATION NO.                        | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/003,116                             | 12/06/2001  | Mark Tuttle          | M4065.0363/P363-A   | 5771             |
| 24998                                  | 7590        | 10/23/2003           | EXAMINER            |                  |
| DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP |             |                      | BEREZNY, NEMA O     |                  |
| 2101 L STREET NW                       |             |                      | ART UNIT            |                  |
| WASHINGTON, DC 20037-1526              |             |                      | PAPER NUMBER        |                  |

2813

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/003,116

Applicant(s)

TUTTLE, MARK

Examiner

Nema O Berezny

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 June 2003 and 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 87-96 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 87-96 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 30 July 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7-18-03 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 87-88 and 90-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (4,801,489) in view of Tracy et al. (5,902,690). Nakagawa discloses a method of forming a structure for supporting an IC chip, which chip may be affected by external magnetic fields, said method comprising: forming a substrate (Figs.8-10 el.12); forming an insulating layer (el.24) over a first surface of said substrate; and providing a support surface for an IC chip, said substrate, insulating layer and support surface forming part of a chip carrier, and supporting a chip with said

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carrier (inherent for a printed circuit board). However, Nakagawa does not disclose supporting a chip with said carrier providing at least one layer of magnetic field shielding material in contact with said chip. Tracy discloses providing at least one layer of magnetic field shielding material on contact with said chip which shields said chip from external magnetic fields (col.4 line 65 – col.5 line 10). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the shielding material on contact with said chip of Tracy with the method of Nakagawa in order to shield the device against stray magnetic fields and focus internally generated magnetic fields within the device (col.5 lines 16-18). Nakagawa also discloses providing a second layer of magnetic field shielding material (el.22) between said insulating layer and said first surface of said substrate (Fig.8); and providing a second layer of magnetic field shielding material (el.22) on both a bottom surface and a top surface of said chip carrier (Fig.8).

Nakagawa does not disclose a magnetic device, or magnetic field shielding material comprising ferrites, manganites, chromites, or cobaltites. However, Tracy discloses a magnetic RAM device (title); magnetic field shielding material comprising ferrites (col.5 lines 2-8); magnetic material comprising  $\text{MnFe(2)O(4)}$  (col.5 lines 2-8); and magnetic material comprising conductive particles of nickel, iron, or cobalt (col.5 lines 2-4,15-30). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the magnetic device and ferrite shielding material of Tracy with the method of Nakagawa. A magnetic device produces internal magnetic fields which can interfere with other devices within the integrated circuit, and a magnetic

shield on both the device and substrate protects the IC from both internal and external magnetic fields (col.5 lines 16-18). Ferrites such as  $\text{MnFe}_2\text{O}_4$  are high permeable materials that shield magnetic fields well (col.5 lines 8-10). Magnetic material comprising conductive particles such as nickel, iron, or cobalt offers several application methods at a low cost (col.5 lines 23-31).

Claim 89 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa in view of Tracy as applied to claims 87-88 above, and further in view of Lin (5,436,203). Nakagawa and Tracy do not disclose a second layer of magnetic field shielding material embedded within the substrate. However, Lin discloses a second layer of magnetic field shielding material (Fig.4 el.22) embedded within the substrate (col.6 lines 14-22). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the magnetic shielding material of Lin with the method of Nakagawa and Tracy. An internal ground plane of the substrate which is grounded to another shield surrounding the device(s) will protect the devices there between from internal and external EMI (col.2 lines 52-61).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nema O Berezny whose telephone number is (703) 305-3445. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on (703) 308-4940. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

NB

  
CARL WHITEHEAD, JR.  
SUPERVISORY PATENT EXAMINER  
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